III. REMARKS

Claims 1-34 were filed in United States Serial No. 10/049,876 on June 7, 2002. Applicant has amended claims 1-19. Applicant hereby cancels non-elected claims 33 and 34 without prejudice or disclaimer, and subject to Applicant's rights to pursue these claims in a continuing application. Applicants respectfully request the reconsideration of claims 1-32.

35 U.S.C. §112

Claims 1-15 have been rejected under 35 U.S.C. §112, first paragraph. It is alleged that the application does not disclose a "swelled starch." Applicant respectfully traverses this rejection.

To comply with the written description requirement of 35 U.S.C. §112, para. 1, each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure. Applicant has amended claims 1 and 16 to recite "a gelled, edible starchy material." The present application discloses that the solid-form food product contains a "gelled starch." The application details the problems inherent in the preparation of a conventional roux. "The preparation of a roux requires a great deal of care, substantial ability and involves a laborious cooking procedure." Page 11, lines 3-4. The specification also states, "a roux is prepared by cooking a mixture of a starchy material, such as flour, and a fat, such as butter or vegetable oil. The flour and fat are combined in suitable proportions in amounts, and are heated for varying periods of time, depending on the ultimate consistency and color of the roux that is desired by the preparer." Page 2, lines 7-11. "Unless the butter and flour are stirred to distribute the heat to allow the starch granules to flow evenly, they will later fail to absorb the liquid." Page 2, lines 27-28. Additionally, "burning the flour will also shrink the starch, making it incapable of continuing to swell." Page 3, lines 1-2.

The Applicant has developed a flavored solid-form food product to overcome the problems associated with the preparation of the conventional roux. The solid-form food product that "can be used to avoid having to prepare a roux, gravy or sauce at the time of food preparation and to avoid the inconsistencies inherent in a roux, gravy or sauce product." Page 11, lines 5-7. Support for the "gelled starch" limitation can be found in the specification at page 17, lines 11-18, disclosing heating the fat and starch at a temperature between 220°F and 225°F (104°C-107°C). Support can also be found in Examples Nos. 1-5, 7 and 8 which discloses that the fat and starch components are combined at heated at 225°F (107°C), a temperature sufficient to melt the fat component and to cause the starch to gel.

It is well known in the culinary arts that when a fat and starch material are mixed together to form a roux, the fat and starchy material must be heated together at a high enough temperature to cause the fat component to melt and to cause the starch to begin to swell and ultimately "gel". Exhibits A and B attached hereto demonstrate that it is well known that starch begins to swell in response to heating at temperatures of 64°C and greater. "When liquid is added to flour, the starch granules inside the flour begin to swell when they reach 64°C." Exhibit A. "Starch begins to gelatinize between 60 and 70°C . . ." "Up to 60 to 70°C the swelling is reversible . . ." "With higher temperatures irreversible swelling called gelatinization begins." Exhibit B.

Because the starch is heated well in excess of 70°C (clear teaching of heating at a temperature between 220°F and 225°F (104°C-107°C)), for an extended period of time, it is implicit in the disclosure that the starch begins to swell and undergoes gelatinization to form a gelled starch. Additionally, the application discloses the difficulties of preparing a roux. The solid-form food product provides a gelled starch so that a cook does not have to perform the step. A person of ordinary skill in the art would have understood, at the time the patent application was filed, that the description discloses a solid-form food product containing a gelled starch by virtue of the disclosed method of preparation. Therefore, Applicant respectfully requests withdrawal of this rejection.

Claims 16-32 have also been rejected under 35 U.S.C. §112, second paragraph. It is alleged that it is not clear what level of pH would be considered "substantially acid neutralized." Without acquiescing to the Examiner's rejection of the claims, the limitation "substantially acid neutralized" has been deleted. As this limitation has been deleted, the rejection is now considered moot.

35 U.S.C. §102

Claims 1-15 have been rejected under 35 U.S.C. §102(b) as being anticipated by WO 96/29894. It is specifically alleged that WO 96/29894 discloses a sauce base containing fat, starch, flavor, hydrocolloid, and water, and that the starch inherently swells during boiling.

Applicant respectfully traverses this rejection. The Examiner relies on the disclosure of Page 10, line 15 of WO 96/29894 as support for a swelled starch. Page 10, line 15 of WO 96/29894 does not teach a solid-form food product with a swelled starch. To the contrary, this passage describes a **sauce** that is made by mixing water with the sauce base, and heating the mixture of the water and sauce base to achieve a flowable sauce. Page 10, lines 14-19 specifically teaches that "To these products, an equal amount of water was added, the ingredients mixed during heating, and the heat source was extinguished after the mixture boiled for 30 seconds." To the extent that any swelling of the starch occurs in the sauce base, it only occurs during preparation of a flowable sauce from the sauce base. The swelling is not a result of the preparation of the sauce base.

Moreover, Page 6, lines 11-20 of WO 96/29894 expressly discloses that "[I]n the sauce composition, 1-20 wt% of a starch is present which preferably **has not considerably gelled. This means that the starch in the sauce base composition has not been heated to a temperature and for a time sufficient to gel.... However, if the sauce base product of the invention is subjected to light microscopy analysis, starch particles are shown, which are known to be characteristic of a starch which has not gelled."** [Emphasis added].

This express language in WO 96/29894 cannot be ignored. Accordingly, WO 96/29894 does not disclose that a flavored solid-form food product is formed with a gelled starch. To the contrary, as stated above, WO 96/29894 discloses that the starch in the sauce base is not gelled. Therefore, WO 96/29894 discloses methods to produce a sauce base without a swelled starch. The "boiling" reference the Examiner refers to merely describes the preparation of a sauce from a mixture of the **previously-prepared sauce base** and water. As the limitation of a solid-form food product with "[a] swelled, edible starchy material" is not disclosed by WO 96/29894, claim 1 is not anticipated by this reference. Claims 2-15 ultimately depend from claim 1 and therefore as a matter of law are also not anticipated by WO 96/29894. Applicant respectfully requests withdrawal of this rejection.

35 U.S.C §103

Claims 16-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over WO 96/29894 in view of U.S. Pat. No. 6,596,336. It is specifically alleged that WO 96/29894 discloses a food product containing fat, starch, flavor, hydrocolloid, and water. It is also alleged that WO 96/29894 discloses the addition of carbon dioxide to the food product. It is further alleged that U.S. Patent No. 6,596,336 discloses a seasoning mix containing sodium bicarbonate. While the Office Action expressly concedes that WO 96/29894 does not disclose the addition of sodium bicarbonate to the sauce base, it is alleged that sodium bicarbonate is a source of carbon dioxide and that it would have been obvious to include the sodium bicarbonate disclosed in U.S. Patent No. 6,596,336 in the sauce base of WO 96/29894 as the source of carbon dioxide.

Applicant respectfully traverses this rejection. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Additionally, there must be a suggestion or motivation to combine the reference teachings.

First, the combination of the prior art references is improper because there is no suggestion or motivation to combine the reference teachings. An edible bicarbonate is included in the flavored, solid form food product disclosed in the present application to alter the pH of the food product. By contrast, page 9, lines 1-of 7 WO 96/29894 discloses "[B]y addition of a gas such as air, carbon dioxide, or preferably nitrogen, by methods all well known in the art, the structure of the water containing sauce base can be altered. Without addition, a 15-25 wt % water containing product has a stiff pate-like morphology, whereas the addition of a gas provides a soft, spoonable, mousse-like structure."

The issue of acid reduction of the sauce base product is not contemplated or addressed in WO 96/29894. The gas (air, carbon dioxide, or nitrogen) is not added to the sauce base of WO 96/29894 to alter the pH of the sauce base. Rather, the gas is specifically added to the sauce base to alter the physical structure of the sauce base to render it scoopable or spoonable.

The Examiner's allegation that because WO 96/29894 includes acidic ingredients the gas (carbon dioxide) could be introduced by means of a solid sodium bicarbonate is not persuasive. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990) (Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." 916 F.2d at 682).

While carbon dioxide may be derived from a reaction involving sodium bicarbonate, there is simply no disclosure, suggestion, or motivation to include an edible bicarbonate in the sauce base of WO 96/29894 for any purpose. There is also no disclosure, suggestion or motivation to add a component to the sauce base product of WO 96/29894 for the purpose of altering the pH of the sauce base. Consequently, the Examiner has arbitrarily selected one particular source of carbon dioxide (sodium bicarbonate) to the exclusion of all others.

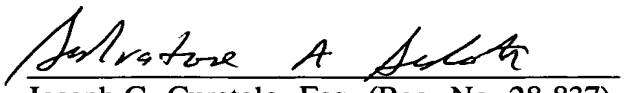
Applicant therefore respectfully submits that there is no motivation to combine these two references and requests withdrawal of this rejection.

Even if the rejection was proper, WO 96/29894 does not disclose a solid-form food product containing a gelled starch. The distinctions between the WO 96/29894 reference and the solid-form food product of the present invention, which are set forth above, apply equally to the rejection under §103(a). Applicant has amended claim 16 to recite that the solid-form food product includes "a gelled, edible starchy material." Applicant has distinguished the solid-form food product of the present invention from the sauce base of WO 96/29894, in connection with the rejection under 35 U.S.C. §102(b) above. Therefore, claim 16 is not obvious in light of these references, taken alone or in combination. Claims 17-32 ultimately depend from claim 16 and therefore are also nonobvious. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596 (Fed. Cir. 1988). Applicant respectfully requests withdrawal of this rejection.

In view of the remarks set forth herein, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. 102, 103, and 112. Applicant also requests the issuance of a formal notice of allowance directed to claims 1-32.

Should the Examiner have any questions regarding the amendments and/or remarks presented in the present response, Applicant's attorney would welcome a telephone call.

Respectfully submitted,



Joseph G. Curatolo, Esq. (Reg. No. 28,837)
Salvatore A. Sidoti, Esq. (Reg. No. 43,921)
Curatolo Sidoti Co., LPA
24500 Center Ridge Road, Suite 280
Cleveland, Ohio 44145
Telephone: 440.808.0011
Facsimile: 440.808.0657
Attorneys for Applicant

12-29-05
Date

EXHIBIT A

HOT TOPICS **Updated N**

Science of Cooking

Contents

- **Key points**
- **Video**: how to make the perfect chip
- Could cooking have **made us human?**
- Celebrity chef's **tips 1** and **tips 2**
- Cooking **chemistry**
- Animation: **cooking and heating**
- **Quiz**: are you clued up about cooking?
- **Vote**: do you prefer to cook with gas or ele
- **Timeline** of events

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Celebrity Chef Secrets 2

Brian Turner - lumpless sauces

"Use boiling liquid and add slowly to the roux. Cook between each addition and stir in well. Whisk whenever possible and if in real trouble, pass through a sieve."

Science explains...

Roux is a type of batter, made from butter and flour, used to thicken sauces. When liquid is added to flour, the starch granules inside the flour begin to swell when they reach 64°C. Heating the mixture further makes them rupture. The flour starch is released into the liquid and starts to thicken it. This is known as 'gelatinisation'.

So when flour is mixed with hot liquid, the exterior portion of the starch granules become gelatinised and sticky. They then bind around the dry starch granules, forming pockets of dry flour trapped inside a sticky ball - or 'lumps'.

Adding liquid to the roux gradually whilst stirring, ensures that the starch granules heat up evenly, so they swell in unison. This results in a smooth, lumpless sauce.

Antonio Carluccio - making the perfect pasta

"Cook the pasta in plenty of boiling water. The pan must be large enough for the water to remain at a good rolling boil, so the pasta moves around as it cooks, preventing it from sticking together."

from - **Passion For Pasta**

OTHER HOT TO

Alcohol

MORE FROM TH

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Food: Recipes
Everything from a Cook quick fix to Ramsay roast

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STARCH

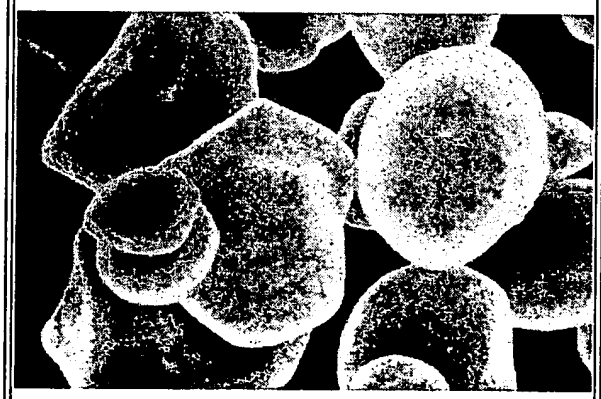
Gelatinization of Starch

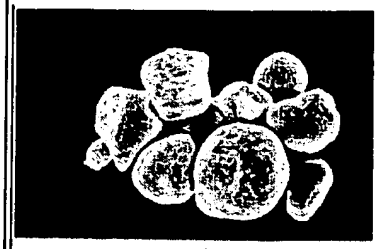
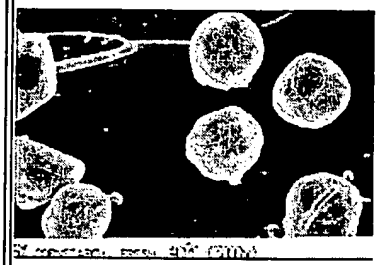
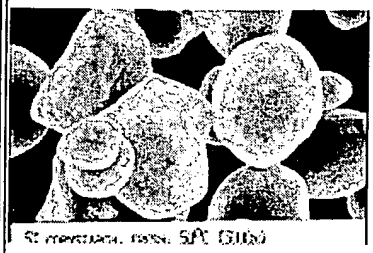
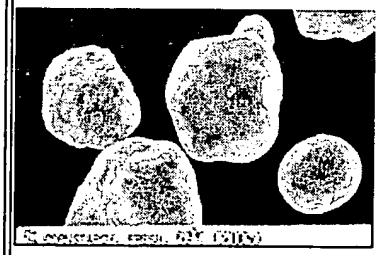
to Top

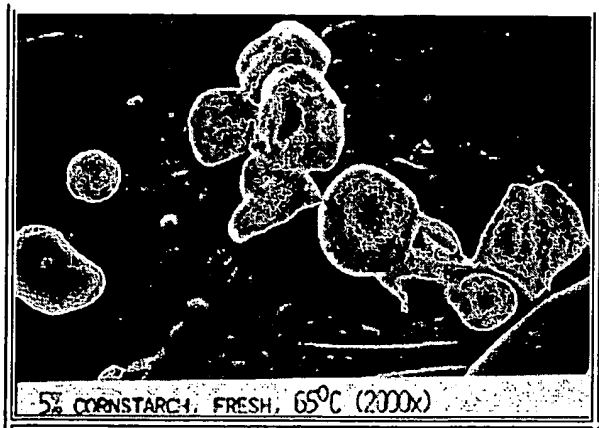
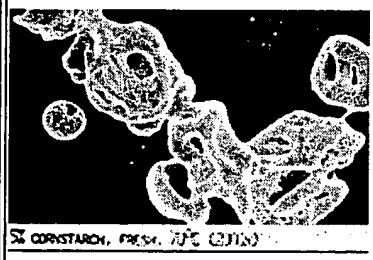
Starch in its processed, commercial form is composed of starch grains or granules with most of the moisture removed. It is insoluble in water. When put in cold water, the grains may absorb a small amount of the liquid. Up to 60 to 70°ree;C the swelling is reversible, the degree of reversibility being dependent upon the particular starch. With higher temperatures in irreversible swelling called gelatinization begins.
Starch begins to gelatinize between 60 and 70C, the exact temperature dependent on the specific starch. For example, different starches exhibit different granular densities, which affect the ease with which these granules can absorb water. Since loss of birefringence occurs at the time of initial rapid gelatinization (swelling of the granule), loss of birefringence is a good indicator of the initial gelatinization temperature of a given starch. The largest granules, which are usually less compact, begin to swell first. Once optimum gelatinization of the grains has occurred, unnecessary agitation may fragment the swollen starch grains and cause thinning of the paste.
The gelatinization range refers to the temperature range over which all the granules are fully swollen. This range is different for different starches. However, one can often observe this gelatinization because it is usually evidence by increased translucency and increased viscosity. This is due to water being absorbed away from the liquid phase into the starch granule.

Gelatinization Changes in Starch

From the changes brought about by this process shown below, a starch paste may occur and/or a starch gel if conditions are correct. These changes are listed and may be seen by clicking on the heading of this paragraph.

	Raw starch that has not had moisture added does not undergo gelatinization. By definition, gelatinization is a phenomena which takes place in the presence of heat and moisture. The dry raw starch, if heated, would undergo dextrinization. This certainly would affect the starch paste viscosity and starch gel strength. The paste viscosity would be decreased and gel strength decreased. If a "limited amount" of moisture is added to the raw starch you may get partial gelatinization. This condition exists in baked products.
	Cornstarch at a 5% level in 95% water would have a slight change occur if heat is initiated. Water might be slightly ADSORBED onto the surface of the granule. Actually, in the research from which these images came, I found that I got a difference in paste viscosity and

	ultimate optimum gelatinization temperature as measured by viscosity if I allowed cornstarch to sit in water at room temperature. This led me to believe that there is some initiation of adsorption upon the granule at room temperature (27C).
	If this 5% dispersion of cornstarch was heated to 40C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule might begin to be loosened slightly. In some types of starches water might even begin to be ABSORBED into the granule.
	If this 5% dispersion of cornstarch was heated to 50C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would begin to be loosened.. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, some of the amylose may begin to work itself off the granule surface, thus, opening the structure even more.
	If this 5% dispersion of cornstarch was heated to 60-65C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would loosen. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, some of the amylose would work itself off the granule surface, thus, opening the structure even more. This in turn would allow even more of the water to become ABSORBED and more amylose to work itself out into a colloidal dispersion outside of the granule. The long amylose polymer is a colloid in characteristics.
	This is intermediate between 60 and 70C. The precise changes are affected by rate of heating, condition of the starch and

	other factors.
	If this 5% dispersion of cornstarch was heated to 70-90C I would expect more water would be ADSORBED onto the surface of the granule, the hydrogen bonding between the starch polymers within the granule would loosen. This would allow the water to penetrate into the granule becoming ABSORBED by the granule. Additionally, the amylose would work itself off the granule surface, thus, opening the structure even more. This in turn would allow even more of the water to become ABSORBED and more amylose to work itself out into a colloidal dispersion outside of the granule. The long amylose polymer is a colloid in characteristics. At some point between 60-95C we would likely have gelatinization occur. This might be measured by loss of birefringence, increased viscosity, translucency, increased susceptibility to enzyme action, x-ray diffraction or some other chemical or physical means. At this point, the starch granule is swollen as much as possible. It is a starch sol until you remove it from the heat and begin to allow the amylose and some amylopectin to recrystallize, i.e. realign.
	In some instances, when heated to 90C the starch granule could reach optimum gelatinization and be a nice swollen granule sack. In other cases, this may allow the sack to "implode" and loose their contents as there is not enough structure and hydrogen bonding to hold the polymers together. It is interesting that overcooking, as with overstirring, will decrease the starch paste colloidal sol viscosity.

Updated: Saturday, September 24, 2005.